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ON THE PENIAL STRUCTURES OF THE SAURIA.*

IN the course of preparation of a work on the scaled reptiles of North America for the Smithsonian Institution it has become necessary to examine some neglected parts of the anatomy. In the present paper I give the results of an investigation into the structure of the hemipenis of the lizards. Very little attention has been given to the subject hitherto, and our knowledge up to 1856† is thus summarized by Stannius: A duplication or bifurcation of each organ is present in *Lacerta* and in *Platydictylus guttatus*. The copulatory organs of the Chamæleonidæ are distinguished by their shortness. In various Varanidæ which have been investigated, the internal cavity (external when protruded) has transverse concentric folds. A fissure interrupts these folds, so that they are not complete annuli. The extremity is acuminate and expands at the base, forming a kind of glans.

In 1870‡ J. E. Gray describes and figures this organ of *Varanus harrisi*, giving the best illustration that I know of. In 1886 Wiedersheim§ describes and figures this organ in *Lacerta*. Besides these references I know of nothing later.

As was to have been anticipated, I have found these organs to correspond with the rest of the structure, and to furnish invaluable aids to the determination of affinities among the Sauria. Reference to them cannot be omitted henceforth in cases where the other characters render the question of affinity uncertain.

In the Sauria the male intromittent organ or hemipenis presents much variety of structure, showing some parallels to the

corresponding part in the snakes. It is, however, rarely spinous, as is so generally the case in the Ophidia, the only spinous forms being, so far as I have examined, the American Diploglossinæ and genera allied to *Cophidas*.

The higher Sauria have the apical parts modified, as in the Ophidia, by the presence of calyculi. Such are characteristic of the Rhipitoglossa and Pachyglossa. The Nictisaura possesses the same feature. The Diploglossa, Helodermatoidea and Thecaglossa have the organ flounced, the flounces often pocketed or repand on the margin. In the Leptoglossa we have laminae only; in the Tiidæ mostly transverse, and in the Scincidæ mostly longitudinal. In various genera terminal papillæ are present. The organ may be simple, or bifurcate, or merely bilobate. I have not met with the case so common in Ophidia, where the sulcus spermaticus is bifurcate and the organ undivided.

The structures of the hemipenis have a constant systematic value. As in the Ophidia, the value differs with the character, but it varies from generic to superfamily in rank.

E. D. COPE.

CURRENT NOTES ON ANTHROPOLOGY.

THE ARCHÆOLOGY OF SWITZERLAND.

A BRIEF and excellent conspectus of the archæology of Switzerland is presented in a recently published lecture by Dr. J. Heierli, of the University of Zurich. A number of important 'stations' are named and described in the appendix.

That the upper valley of the Rhine was peopled in palæolithic and immediately post-glacial times is proved by the extraordinary discoveries in the Kessler-loch, near Thuringen. They include bones of extinct animals, weapons and ornaments, and drawings of unquestionable antiquity. The lake dwellings contribute a rich harvest for the following period, the neolithic; while the bronze and later epochs have numerous

* Abstract of a paper read before Sect. F of the Amer. Ass. Adv. Sci., Buffalo, August, 1896.

† Zootomie der Amphibien, p. 266.

‡ Annals Magaz. Nat. Hist., 1870, VII., p. 283.

§ Lehrbuch der Vergl. Anat. Wirbelth.

remains. By these relics it is not difficult to trace in this area the gradual but certain progress of man from the glacial morning of his life down to the present day, without a break in his productive activity.

Dr. Heierli's address is entitled 'Die Archæologischen Funde des Kantons Schaffhausen in ihrer Beziehung zur Urgeschichte der Schweiz.' (Sauerlander, Aarau, pp. 31.)

THE SVASTIKA SYMBOL.

DR. VON LUSCHAN in the Proceedings of the Berlin Anthropological Society last February described some weights from Ashantee, marked with the sign of the svastika, and also exhibited photographs of a woman of the Basundi tribe (East Africa, valley of the Kuilu River) who was tattooed over her body with a number of figures simulating the same symbol. He was not able to offer the meaning which in these different parts of the continent was attached to the sign, nor the native word for it.

It is quite possible that its occurrence in Africa should be referred to influence from India, which was exerted repeatedly from early times, although the design is a simple one and might have arisen spontaneously.

Dr. Von Luschan refers to its appearance in America as rare. The extremely well cut copper svastika from the Hopewell mound, Ohio, would intimate that it was an important and familiar device for some purpose. At any rate, it can no longer be maintained, as was argued some years ago, that it is an essentially 'Aryan' symbol. It apparently belongs to all races.

HOTTENTOT LYRICAL POETRY.

THE Hottentots are often quoted as on or near the lowest round of the ladder of humanity. If that is correct it increases our respect for the race. Those who have studied them closest have in them found much to admire. One such trait is their regard for women. The missionary Hahn

tells us that the most sacred oath a man can take is to swear by his eldest sister! So great is his veneration for her that he never addresses her first.

In a recent number of 'Globus,' Dr. Jacobowski collects from various sources some specimens of the lyrical poetry of the tribe. It is of a much higher grade, both in sentiment and expression, than we could have expected from the cultural condition of the people. One poem reads:

"My lioness! Dost thou fear that I will charm thee with magic arts? Soft is thy hand which milkest the cow. Bite me (*i. e.*, kiss me). Pour me the milk, my lioness, thou daughter of a chieftain."

Other songs of love are chanted alternately by men and women. Some express hate and the desire for revenge, others jealousy and defiance, approaching the 'nith songs' of the Eskimos. This interesting study reveals anew how profoundly the poetic faculty is rooted in the nature of man as one of his earliest and most universal modes of expression.

D. G. BRINTON.

UNIVERSITY OF PENNSYLVANIA.

CURRENT NOTES ON METEOROLOGY.

COLONIZATION BY EUROPEANS IN THE TROPICS.

It is at present the almost universal opinion among those who have studied the relations of climate and man that complete acclimatization of Europeans in the tropics is impossible, and that therefore true colonization by the white race in the tropics is also impossible. In this connection Arthur Silva White, in an article on 'British Unity' in the *Scottish Geographical Magazine* for August, speaking of tropical countries, says that northern Europeans cannot establish permanent homes in climates so dissimilar to their own. Permanent homes have been established by Europeans in the West Indies, but their descendants have undergone inevitable deterioration by partial assimilation.